IEEE Registration Authority

OUI Registry Restructuring

draft-ieee-rac-oui-restructuring

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OUI Registry Restructuring

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- IETF 86 presentations
  - IETF Technical Plenary
    - Monday, 17:40, Carribean 3/4
  - OPSAREA
    - Tuesday, 13:00, Carribean 5

- Comments
  - stds-rac-public@listserv.ieee.org

OUI (organizationally unique identifier)

- Defined by IEEE Std. 802
  - 3 octets in length (24 bits) , but address space is 22 bits. E.g., AC-DE-48

Application dependent bits

						X	M
octet 0							
octet 1							
octet 2							
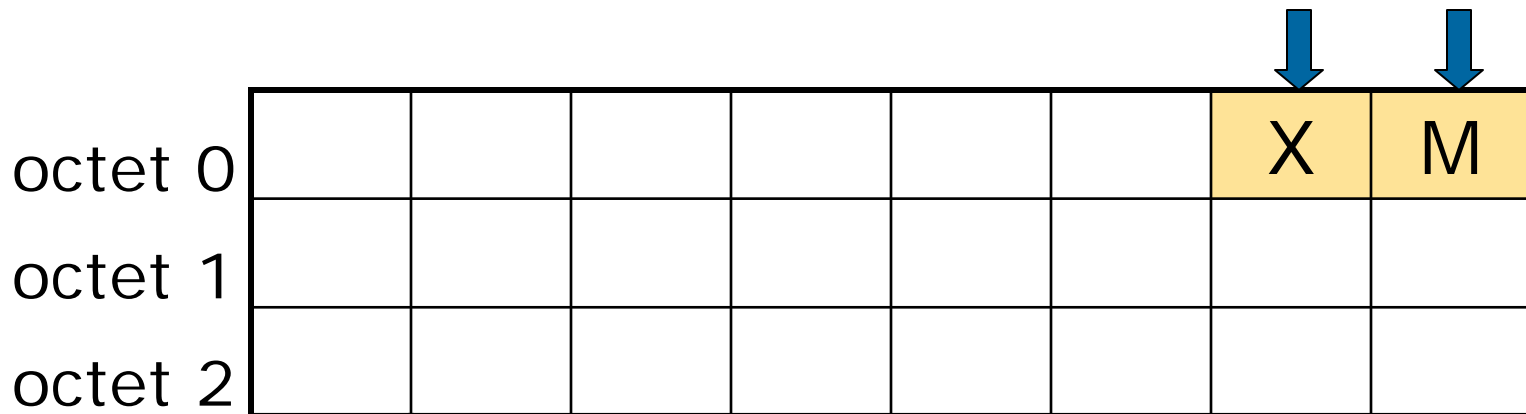
- Many derivative identifiers may be created (e.g., EUI-48, EUI-64, protocol identifer)
  - E.g., MAC address: AC-DE-48-00-00-01

Rationale for change

- RAC "Prime directive"
  - Do not run out of global MAC48 addresses for 100 years
    - ~250 billion EUI48 (of ~70 trillion possible) addresses have been assigned

- Volume
  - A few vendors are volume users
    - >32M MAC (EUI-48) addresses assigned per month
  - Most other vendors use far less
    - Smaller assignment blocks would reduce "lost" or "unused" addresses

- Virtualization
  - Usage of global MAC (EUI-48) addresses by software
    - Traditionally RAC limited vendors to only a few per hardware device
  - Reuse of global MAC (EUI-48) addresses per rack / cluster / data center
    - Guidance planned, even though this is not permitted

Proposal

- Maintain existing OUI & OUI-36 registries

- Create registries for EUI-48 sizes
  - 16M, 4M, 1M, 4K

- Disconnect addresses from Company identifier
  - Assign 24 bit Company identifiers without addresses
  - Assign these within the "local space" (with X bit set)

- Suggest VMs create addresses based on new Company identifiers in the "local space"
  - Resulting in reusable local addresses, with some organization

Proposed Restructured OUI-based Registries

Manufacturer ID	Registry	EUI48 (MAC address)
1 24-bit identifier	OUI	16777216
-	OUI26	4194304
-	OUI28	1048576
-	IAB	4096 _merge_
1 36-bit identifier	OUI36	4096
1 24-bit identifier	CompanyID	-

IETF Community input requested

- Will this break anything?
  - Is there any repurposing of the 2 Application Dependent bits of the OUI?
  - Is there any embedded use in other protocols that would be impacted?

- Implementation planned for 2014
  - Comments requested by mid-2013

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- Glenn Parsons, Past Chair
- Geoff Thompson, (LMSC prime) IEEE 802
- Clint Chaplin, (LMSC alternate) IEEE 802
- Bob Davis, (MSC prime)
- Leonard Tsai, (MSC alternate)
- Tom Kurihara, (VTS / ITS prime) IEEE 1609
- Geoffrey Garner , (I&M prime) IEEE 1588
- George Riley, ex-officio (CS SAB)

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